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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/648,194

08/27/2003

Jun Yeob Lee

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3487

49455

7590

10/04/2005

STEIN, MCEWEN & BUI, LLP  
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EXAMINER

WILLIAMS, JOSEPH L

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/648,194	LEE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Joseph L. Williams	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 12-22, 24, 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 9, 11, 23 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/27/03 &amp; 9/21/05</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

3. Claim 17 is objected to because of the following informalities: The word "electorn" should be "electron". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 10, 12-22, 24, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Kido et al. (US 6,396,209), of record by Applicant.

Regarding claim 1, Kido ('209) teaches in figure 1 and the corresponding columns and lines, an organic electroluminescent display device comprising; a substrate (1); a first electrode (2) and a second electrode (6) formed on the substrate, and a plurality of organic film layers between the first and second electrodes, comprising: an emitting layer (4), a first organic film layer (5) provided between the

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emitting layer and the second electrode, and a second organic film layer (3) provided between the emitting layer and the first organic film layer wherein the first organic film layer comprises a first organic metal complex compound, and the second organic film layer comprises a mixture of a charge carrier transport material and a second organic metal complex compound.

Regarding claim 2, Kido ('209) teaches a charge carrier of the charge carrier transport material is an electron.

Regarding claim 3, Kido ('209) teaches the charge carrier transport material comprises at least one material selected from the group consisting of a polycyclic hydrocarbon series derivative, a heterocyclic compound, and derivatives thereof.

Regarding claim 4, Kido ('209) teaches the first and second organic metal complex compounds each comprise at least one metal selected from the group consisting of an alkali metal, an alkali earth metal, and a rare earth metal.

Regarding claim 5, Kido ('209) teaches the first and second organic metal complex compounds comprise the same metal.

Regarding claim 6, Kido ('209) teaches thickness of the first organic film layer is 10 nm or less. (50 angstroms)

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Regarding claim 7, Kido ('209) teaches the thickness of the first organic film layer is 0.5 to 10 nm.

Regarding claim 8, Kido ('209) teaches the thickness of the second organic film layer is 10 nm or less.

Regarding claim 10, Kido ('209) teaches the first and second organic metal complex compounds each comprise one compound selected from the group consisting of tris(8-quinolinolato)aluminum and 8-quinolinolato lithium, comprising one or more 8-quinolinolatos as a ligand, and derivatives thereof.

Regarding claim 12, Kido ('209) teaches the first electrode is an anode, and the second electrode is a cathode comprised of at least one metal selected from the group of Al, Ag, Yt, and metal halide.

Regarding claim 13, please note that the claimed method steps are product by process limitations. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Furthermore, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Regarding claim 14, please note that the claimed method steps are product by process limitations. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Furthermore, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Regarding claim 15, Kido ('209) teaches the first organic film layer is positioned adjacent to the second electrode.

Regarding claim 16, Kido ('209) teaches an organic electroluminescent display device comprising, a substrate (1), a first electrode (2) and a second electrode (6)

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formed on the substrate, a first layer (5) comprising a metal halide, contacted with the second electrode, and a second layer (3) comprising a mixture of a charge carrier transport material and an organic metal complex compound, deposited under the first layer.

Regarding claim 17, Kido ('209) teaches a charge carrier of the charge carrier transport material is an electron.

Regarding claim 18, Kido ('209) teaches the charge carrier transport material comprises at least one material selected from the group consisting of a polycyclic hydrocarbon series derivative, a heterocyclic compound, and derivatives thereof.

Regarding claim 19, Kido ('209) teaches the organic metal complex compound and the metal halide each comprises at least one metal selected from the group consisting of an alkali metal, an alkali earth metal, and a rare earth metal.

Regarding claim 20, Kido ('209) teaches the thickness of the first layer is 10 nm or less.

Regarding claim 21, Kido ('209) teaches the thickness of the first layer is 0.5 to 10 nm.

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Regarding claim 22, Kido ('209) teaches the thickness of the second layer is 10 nm or less.

Regarding claim 24, Kido ('209) teaches the organic metal complex compound of the second layer is one compound selected from the group consisting of tris(8-quinolinolato)aluminum and 8-quinolinolato lithium, comprising one or more 8-quinolinolatos as a ligand, and derivatives thereof.

Regarding claim 26, Kido ('209) teaches an organic electroluminescent display device comprising: a bi-layer electron injection structure comprising: a first organic film layer comprising a first organic metal complex compound, and a second organic film layer comprising a second organic metal complex compound mixed with an electron transport material.

Regarding claim 27, Kido ('209) teaches an organic electroluminescent display device comprising: an electron transport layer, wherein the electron transport layer is a mixture of an organic metal complex compound and an existing electron transport layer.

#### ***Allowable Subject Matter***

5. Claims 9, 11, 23, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



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6. The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 9 and 23, the prior art of record neither shows nor suggest a EL device comprised of, in part, the organic metal complex compound in the second layer comprises 75 % or less of the mixture of the charge carrier transport material and the organic metal complex compound.

Regarding claims 11 and 25, the prior art of record neither shows nor suggest an EL device comprised of, in part, a hole retardation layer.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (571) 272-2465. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph L. Williams  
Primary Examiner  
Art Unit 2879